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EXAMINER	
GRAHAM, ANDREW R	
ART UNIT	**PAPER NUMBER**
2644	

DATE MAILED: 01/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/707,616	LINDEMANN ET AL.	
	Examiner	Art Unit	
	Andrew Graham	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10,14-20,24-34,38-44 and 48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,14-20,24-34,38-44 and 48* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 July 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. Corrected drawings were received on July 12, 2004. The changes made in these drawing, along with those made to the specification, are sufficient to overcome the previously made objections. In terms of content, these drawings are approved. As indicated in the miscellaneous mailing of December 28, 2004, revised amendment practice requires such drawings to be labeled "Replacement Sheet". Accordingly, for formal entry into the case, the applicant is respectfully requested to resubmit this page of drawings with the proper page label, if the applicant has not already done so at the time of the mailing of this office action.

Claim Objections

2. Claims 1-85 were originally submitted with the application on 11/7/2000. An amendment submitted 10/11/2001 cancelled originally numbered Claims 1-85, and replaced these claims with a new set of Claims 1-47. This re-use of numbers was improper under 37 CFR 1.121. The proper numbers for these claims would have been 86-132. Extending this amendment, another amendment, submitted 12/18/2003 amended these claims, and added another claim 48. Based on the amendment history, these claims should have been numberd 86-132 with the newly added Claim being 133. These claims were further amended on 7/12/2004. The proper claim numbers, based on the application history, should have been 86-133, with the pending claims in this

amendment being 86-96, 99-105, 109-119, 123-129, and 133. These proper claim numbers are used in the present rejection.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. **Claims 86-95, 99-105, 109-119, and 123-129** are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 5-14 of copending Application No. 09/452904. Although the conflicting claims are not identical, they are not patentably distinct from each other because the current claims are a subcombination of the claims from the previous application. The claims of the current application cite only the receiver and not the combination of the receiver and transmitter as in the audio system of the prior application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

The applicant's response of July 12, 2004, regarding the potential submission of a terminal disclaimer is noted.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. **Claims 86-96, 99-105, 109-119, 123-129, and 133** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 86, 99, 109, 117, 123, as amended, recite the limitation "single receiver for transmitting". The examiner respectfully submits that it appears that this limitation should be "single transmitter for transmitting" as the receiver in the system is not disclosed as being able to also transmit. The limitation is rejected as containing new matter by virtue of this newly claimed function of the receiver. The specification notes a transmitter (131) as being able to output a signal through an antenna (400)(Figure 4; page 14, lines 11-13) as

opposed to the receiver, which obtains an input from an antenna (300)(Figure 3; page 16, lines 7-9).

Appropriate correction or clarification is required.

Claims 87-95, 100-105, 110-116, 118-119,123-127, and 129 are rejected at least in view of their respective dependencies upon the independent claims rejected above. Claims 91 and 114, as amended, particularly recite the concept that is the basis of the above rejection, that the single receiver is able to receive signals, as well as transmit as recited in the respective independent claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 86-93, 95, 99-103, 105, 109-115, 117, 119, 123-127, and 133** are rejected under 35 U.S.C. 103(a) as being anticipated by Schotz et al (USPN 5832024), hereafter, "Schotz '24", in view of Allen et al (USPN 6487296 B1), hereafter "Allen, and Schotz et al (USPN 5491839), hereafter, "Schotz '39".

Regarding **Claim 86,** Schotz '24 discloses a digital wireless speaker system (20) with a transmitter (22) and a receiver (24) (col. 6, lines 6-11). The antenna (40) of the receiver (24) meets the

limitation of "means for receiving the RF signal". The receiver system (24) includes a data clock recovery circuit (194) that obtains a clock signal from the input signal and further provides the rest of the system with a synchronized clock signal (col. 12, lines 28-36). This reads on "means for generating a derived sample clock based upon the transmission clock". The system also includes a convolutional deinterleaver (200) and an FEC decoder (198) for deriving the audio data from the input signal (col. 12, lines 47-67 and col. 13, lines 1-9). This data is then received by an output means (46), which connects the output signal to speakers or another suitable transducer equipment (col. 6, lines 51-54). This reads on "means for broadcasting sound based upon the selected audio channel".

However, Schotz '24 does not specify:

- that the loudspeaker is a distributed digital wireless system with at least two discrete wireless speakers
- means in each speaker for selecting one of the audio output channels
- means for generating audio output data based on the selected audio channel

Allen discloses a wireless surround sound speaker system that includes a variety of options regarding the output and controls of the various speakers of the system. Allen's system includes a transmitter (13) and multiple receivers (90,91,100,101), where a receiver (14) is incorporated at each speaker (30) (col. 5, lines 45-65). Such an arrangement, in view of the transmission of signals by Schotz, reads

on "A distributed digital wireless loudspeaker system", and the speakers shown in Figure 1 read on "at least two discrete speakers". The transmitter (13) includes multiple transmitters (65,66,80,81) for emitting various channels of the audio input signal at pre-selected frequencies (51) (col. 7, lines 34-39 and 59-62). The capability of selecting one of these channels (e.g., selecting F-R instead of R-R) though the use of a channel selector knob (40) reads on "means for selecting one of the audio channels from the RF signal for broadcast" and the inherent processing of the channel data for output, such as by the decoders (92,102) and amplifier (110) of Allen, reads on "means for generating an output audio signal based upon the selected audio channel" (col. 7, lines 63-67 and col. 8, lines 1-19).

To one of ordinary skill in the art at the time the invention was made, it would have been obvious to include the multiple independent speakers with selective output channel means as taught by Allen into the digital wireless system of Schotz. The motivation behind such a modification would have been the capability of selecting one of a plurality of channels to be emitted by a single speaker, as is disclosed by Allen. The connection of individual receivers in each of the speakers would have been desirable because it would have eliminated the need for any wiring between speakers, as is also noted by Allen. It would also have enabled local controls to be placed at each individual speaker, as is shown in Allen (Figure 1).

However, Schotz '24 in view of Allen does not specify "a single receiver" as recited in the present version of the claims. In view of

the above rejection, it is unclear as to whether the applicant, by the most recent amendment, intended to recite "a single transmitter" as suggested by the context of the amended phrase, or "a single receiver" in place of the "means for receiving" as suggested by the amendment made to Claim 6. For the sake of expediting prosecution, both potential interpretations are addressed herein.

Schotz '39 teaches the use of a single transmitter and a single receiver in transmitting a plurality of audio signals. The left and right signals from a plurality of sources (#1,#2,#3) are each modulated by one of selected set of carrier frequencies, wherein the modulated signals are then combined and output through the use of a single broadcast circuit (34) (col. 3, lines 46-65; col. 17, lines 19-41; col. 19, lines 51-67; col. 20, lines 1-4). This single broadcast circuit (34), in combination with the voltage controlled oscillators (82) of each channel and the antenna (12) reads on "a single receiver for transmitting" in the context of the limitation in the presently submitted version of the claims. The receiver (6) of Schotz '39 receives signals through a single antenna (20), filter (124), RF amplifier (126) and other components before being applied to audio output circuitry (116) that outputs audio signals (168,170) based on a user input selection of a channel select input (18) and corresponding adjustment of a local oscillator (130)(col. 23, lines 12-67; col. 24, lines 1-11; col. 28, lines 27-46). This use of one set of receiver components (20,124,126) reads on "a single receiver" in the context of

a single receiver in each device with a corresponding output, as is suggested by the amended Claim 6.

To one of ordinary skill in the art at the time the invention was made, it would have been obvious to incorporate the single transmitter and single receiver means of Schotz '39 to emit and receive the respective pairs of channel signals of the system of Schotz '24 in view of Allen. The motivation behind such a modification would have been that such frequency modulation and demodulation components of the transmitter and receiver of Schotz '39 would have enabled simultaneously transmission of a plurality of channels using a single transmitter, as opposed to a plurality of transmitters, as is suggested desirable by Schotz '39. Such a combined transmission and reception arrangement results in a reduced number of components, such as the distinct antennas, while still providing the same overall function.

Regarding **Claim 87**, the incoming broadcast signal (36) of Schotz '24 is processed through the receiver (24) to decoder (198), which supplies error information on a status line (226) to the microprocessor (164) (col. 13, lines 45-48). The digital interface receiver (214) also receives information from the decoder (198) and demultiplexes the signal and decodes subcode information in the signal (col. 13, lines 32-39). This subcode contains information about the quality of the received digital audio as well as the control of aspects such as the volume or tone of the emitted signal.

Collectively, this input data derived from the input signal reads on "the received RF signal includes status data".

Regarding **Claim 88**, the digital interface receiver (214) of Schotz '24 receives information from the decoder (198) and demultiplexes the signal and decodes subcode information in the signal (col. 13, lines 32-39). This subcode contains information concerning the control of aspects of the signal output such as the volume or tone of the emitted signal. On the transmitter side, the subcode information that the digital interface transmitter (62) has the ability to add to the transmission signal includes volume, tone, and other auxiliary control information (col. 8, lines 9-12). Between the volume controls and the most common types of auxiliary control information that a system such as this would involve, the processing performed by the microprocessor (164) based on these control codes reads on "further comprising means responsive to a control signal in the status data for selectively activating the speaker".

Regarding **Claim 89**, the digital interface receiver (214) of Schotz '24 receives information from the decoder (198) and demultiplexes the signal and decodes subcode information in the signal (col. 13, lines 32-39). This subcode contains information concerning the control of aspects of the signal output such as the volume or tone of the emitted signal. The microprocessor (164) determines the control codes that are used to adjust the volume and tone of the emitted signal (col. 13, lines 40-45). Schotz '24 also discloses that the microprocessor may be used to perform signal processing on the

digital audio data. The volume control reads on "means for responding to a control signal in the status data operable for controlling volume of the broadcast sound".

Regarding **Claim 90**, the digital interface receiver (214) of Schotz '24 receives information from the decoder (198) and demultiplexes the signal and decodes subcode information in the signal (col. 13, lines 32-39). This subcode contains information concerning the control of aspects of the signal output such as the volume or tone of the emitted signal. The microprocessor (164) determines the control codes that are used to adjust the volume and tone of the emitted signal (col. 13, lines 40-45). Schotz also discloses that the microprocessor may be used to perform signal processing on the digital audio data. The tone controls, taken in view of the teachings of individual speaker units of Allen, read on "means for responding to a control signal in the status data operable for controlling equalization of the broadcast sound".

Regarding **Claim 91**, the local oscillator (130) of Schotz '39 operates at a frequency selected from a set of frequencies determined by the user input (18) (col. 23, lines 12-64). The selected frequency set is also based on a user input (16), and in the shown embodiment, includes three distinct frequencies (col. 3, lines 2-11; Table II). This input frequency selection using the same receiving circuitry (20,124,126) reads on "the receiver receives two RF signals at two different frequencies, each RF signal including one of the audio channels".

Regarding **Claim 92**, the digital interface transmitter (62) of Schotz '24 combines the control subcodes, a synchronization signal, and the left and right audio data into the single, serial output bit stream (col. 8, lines 5-26). This combined signal is then transmitted from the receiver through transmitter antenna means (38). This reads on "the RF signal further includes a channel of status data".

Regarding **Claim 93**, the transmitter of Schotz '24 includes a digital interface transmitter that initially combines the left and right audio data with the synchronization signal and any control subcodes (col. 8, lines 8-26). The receiver includes a digital interface receiver (214) that demultiplexes the received transmission signal (col. 13, lines 31-33). These two components read on "the two channels of audio transmission data and the status channel are multiplexed prior to transmission" and "means for demultiplexing the received RF signal".

Regarding **Claim 95**, the serial output data from the digital interface transmitter of Schotz '24 is biphase-mark encoded (col. 8, lines 19-21). The encoding of the digital interface transmitter specifically includes a synchronization signal (col. 8, lines 21-26). As is well known in the art, biphase-mark encoding schemes involving data transmission include a particular sequence of data that signify the beginning or end of a frame of transmitted data. Schotz '24 also teaches that synchronization is an essential and difficult aspect of high fidelity digital signal transmission because of the high, real-time rate of data transfer (col. 3, lines 20-65). Schotz '24 also

discloses that data timing must be synchronized with the transmitter, as does the data synchronization (col. 3, lines 42-48). As stated above, the system of Allen discloses the concept of including a receiver at multiple, individual speaker locations. In view of the required, real-time data timing and data synchronization between the transmitter and receiver in the single communication pair of Schotz, it is respectfully submitted that additional receivers would also each need to be synchronized with the transmitter in a real-time manner. This real-time manner would thus mean that the individual receivers would be mutually synchronized to the same audio source, and effectively, to each other. The motivation for such synchronizaton would be the avoidance of drop-outs or improper data timing, as noted in the teachings of Schotz '24. Accordingly, it is respectfully submitted that the teachings of Schotz '24, when taken in view of Allen, read on "the RF signal includes frame markers and the speaker further comprises means responsive to the frame markers for synchronizing the sound broadcast by the speaker with the sound broadcast by each other speaker".

Regarding **Claim 99**, please refer to the like teachings of Claim 86. Regarding **Claim 100**, please refer to the like teachings of Claim 87. Regarding **Claim 101**, please refer to the like teachings of Claim 88. Regarding **Claim 102**, please refer to the like teachings of Claim 89. Regarding **Claim 103**, please refer to the like teachings of Claim 90. Regarding **Claim 105**, please refer to the like teachings of Claim 95. Regarding **Claim 109**, please refer to the like teachings of Claims

86 and 95. Regarding **Claim 110**, please refer to the like teachings of Claim 87. Regarding **Claim 111**, please refer to the like teachings of Claim 88. Regarding **Claim 112**, please refer to the like teachings of Claim 89. Regarding **Claim 113**, please refer to the like teachings of Claim 90. Regarding **Claim 114**, please refer to the like teachings of Claim 91. Regarding **Claim 115**, please refer to the like teachings of Claims 92 and 93. Regarding **Claim 117**, please refer to the like teachings of Claims 86 and 87. Regarding **Claim 119**, please refer to the like teachings of Claim 95. Regarding **Claim 123**, please refer to the like teachings of Claims 86 and 93. Regarding **Claim 124**, please refer to the like teachings of Claim 87. Regarding **Claim 125**, please refer to the like teachings of Claim 88. Regarding **Claim 126**, please refer to the like teachings of Claim 89. Regarding **Claim 127**, please refer to the like teachings of Claim 90. Regarding **Claim 129**, please refer to the like teachings of Claim 95.

5. **Claims 94, 104, 116, 118, and 128** are rejected under 35 U.S.C. 103(a) as being unpatentable over Schotz '24 in view of Allen and Schotz '39 as applied above, and further in view of Anderson et al (USPN 5406634). Hereafter, "Anderson et al" will simply be referred to as "Anderson".

As detailed above, Schotz '24 discloses a wireless digital loudspeaker system that transmits a single, serial data stream between an input signal transmitter and multiple output receivers. This information included in this transmitted data stream involves control

data for adjusting the output operations of the receiving speakers of the system (col. 8, lines 5-26). As detailed above, the microprocessor (164) of the receiver (24) is used to read the control codes, which is in turn used to control the receiver controls, such as those that relate to volume and tone (col. 13, lines 42-44). Allen discloses the use of individual receivers at each individual speaker means, wherein the receiver obtains multiple transmitted frequencies. Schotz '39 teaches the use of a single transmitter and a single receiver in transmitting a plurality of audio signals.

Yet, Schotz in view of Allen and Schotz '39 does not specify:

- that the system includes means for assigning the speaker to a speaker group
- corresponding means for selectively activating the speaker based on this speaker group

Anderson discloses an intelligent speaker unit that provides both a speaker as well as the transmission unit of the system with a wider range and variety of controls. The control message system of Anderson includes the ability to address multiple speaker units with a single reference signal (col. 4, lines 16-19). The control message system also includes the ability to assign multiple speakers with the same sound delay value, based on the location of the speakers (col. 6, lines 21-29). In both situations, these associations and variables are used to determine the output of the speakers. This, in view of the components involved with the control codes in Schotz, reads on "means responsive to a control signal in the status data for assigning

the speaker to a speaker group for selectively activating the speaker based on the speaker group to which the speaker is assigned".

To one of ordinary skill in the art at the time the invention was made, it would have been obvious to add the extended control capabilities of Anderson to the system of Schotz '24 in view of Allen and Schotz '39. Such a control message system would have provided an additional manner for using the various individual loudspeakers in the combined system of Schotz '24 in view of Allen and Schotz '39 may be used. This additional use would have increased the complexity and selectivity available for such an overall, combined audio system. Such controls would have also been based on a property of the sound emission arrangement other than the volume or tone of the signal being emitted.

Regarding **Claim 104**, please refer to the like teachings of Claim 94. Regarding **Claim 116**, please refer to the like teachings of Claim 9.

Regarding **Claim 118**, please refer to the like teachings of Claim 9.

Regarding **Claim 129**, please refer to the like teachings of Claim 9.

6. **Claim 133** is rejected under 35 U.S.C. 103(a) as being unpatentable over Schotz '24 in view of Allen and Schotz '39 as applied above, and further in view of Proakis ("Digital Communications", 3rd Ed. MacGraw-Hill, 1995. pages 698-702). Hereafter, this latter reference will simply be referred to as "Proakis".

As detailed above, Schotz discloses a wireless digital loudspeaker system that transmits a single, serial data stream between an input signal transmitter and multiple output receivers. Allen discloses a method for utilizing individual receivers at each speaker to enable an output channel to be selected for the respective speakers. Schotz '39 teaches the use of a single transmitter and a single receiver in transmitting a plurality of audio signals.

Schotz '24 discloses that the rate of the DSSS transmitter is approximately 16 times the audio bit rate, based on an audio rate of approximately 1.4 Mbps and an operating frequency of 22.5792. It is noted that the audio sample rate is given as an approximation, and several numbers such as 1.50528 and 1.32819 which are approximate to 1.4 would have give the respective output integer multiples of 15 and 17, which are also approximate to the integer 16. It is also noted that the given audio bit rate has only one significant bit. Within the described approximation, the exact audio sample rate of 1.4112, which is approximate to 1.4, would have given the exact audio to output clock ratio of 16. While these approximations significantly suggest the possibility of an integer relationship between the chip clock and the audio data rate, Schotz '24 in view of Allen and Schotz '39 does not specify:

Yet, Schotz in view of Allen and Schotz '39 does not specify:

- that the chip clock has a rate equal to an integer multiple of a rate of the audio sample clock

Proakis discloses the definition of direct sequence spread spectrum signal, including the definition of a chip and the bandwidth expansion factor of using two different rates of the input audio bits and the encoder output bits. Proakis specifically teaches that the expansion factor, the ratio of the output bit, or chip, rate versus the input bit rate is an integer (bottom, page 698). This teaching reads on "means for obtaining a direct sequence spread spectrum chip clock having a rate equal to an integer multiple of a rate of the audio sample clock".

To one of ordinary skill in the art at the time the invention was made, it would have been obvious to make the DSSS of the system of Schotz '24 in view of Allen and Schotz '39 operate at an integer multiple ratio, as is taught by Proakis. The motivation behind such a modification wouxld have been that such an integer multiple ratio would have made the operation of the DSSS transmitter practical, as is noted by Proakis.

Response to Arguments

7. Applicant's arguments filed July 12, 2004 have been fully considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Graham

whose telephone number is 703-308-6729. The examiner can normally be reached on Monday-Friday, 8:30 AM to 5:00 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huyen Le can be reached on (703)305-4844. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AG
Andrew Graham

Examiner
A.U. 2644

ag
January 10, 2005

HUYEN LE
PRIMARY EXAMINER